

Application No. : 10/015,811
Amdt. Dated : March 1, 2004
Reply To Office Action Of : November 28, 2003

REMARKS

The Applicants thank the Examiner for his careful and thoughtful examination of the present application. By way of summary, Claims 78-89 were pending in this application. In the present amendment, the Applicants have canceled Claims 78-83 without prejudice or disclaimer. Accordingly, Claims 84-89 remain pending for consideration.

Objections to Claims

The Office Action objected to Claims 84 and 87-88 based on informalities, including changing the phrase "barrier to corrosion" to "barrier against corrosion." This phrase actually exists in Claims 84-87, and appropriate corrections were made to each claim. In each case, the Applicants assert that such amendment is not considered a narrowing amendment for purposes of patentability. Rather, the intent of such amendment was to clarify the phrase without changing its scope or surrendering any equivalent subject matter whatsoever.

In addition, Claims 84 and 88 were amended to broaden their scope by, in the case of Claim 84, removing a limitation, and in the case of Claim 88, using a broader term suggested by the Examiner. The Applicants assert that the intent of such amendments also does not evidence a surrendering of any equivalent subject matter whatsoever.

Based on the foregoing, the Applicants respectfully request withdrawal of the objections to the claims.

Rejection Of Claims 84-89 Under 35 U.S.C. § 103

The Office Action rejected the previously pending claims under 35 U.S.C. § 103 as being unpatentable over the publication of WO 98/15013, issued to Hartner et al., (the "Hartner publication") in view of U.S. patent no. 4,926,237, issued to Sun et al., (the "Sun patent") and various other combinations of other prior art. The Applicants respectfully traverse these rejections for the following reasons.

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In the present application, independent Claim 84 recites, among other things, a method comprising forming a first barrier against corrosion; forming a second barrier against corrosion comprising conductive material; and forming a conductive contact plug. Additionally, Claim 84 recites that the second barrier is around the conductive contact plug and the first barrier is around the second barrier, thereby forming an electrical contact including at least two protective barriers around the conductive contact plug to avoid corrosive aspects associated with the fabrication of a capacitor.

In contrast to the claimed double wrapped contact plug, the Hartner publication does not teach or suggest implementing a second barrier that comprises conductive material. While this lack of teaching is recognized in the Office Action, on page 7, paragraph 1, the Office Action asserts that the combination of a conductive wrapped contact plug from the Sun patent would be obvious in order to make "a semiconductor device with better protection to the contact plug" The Applicants submit that the such motivation is improper for a number of reasons including (1) the Office Action misconstrues the teaching of the Sun patent, and (2) the motivation cuts against the industry standard of seeking smaller device footprints using less process steps.

The Office Action rationalizes the combination of the Sun patent by alleging that the Sun patent discloses a contact plug 28 inside a dielectric layer 16 that may include SiN, where the contact plug is wrapped with a conductive barrier. However, the Sun patent discloses only an interlevel dielectric 16 common to virtually all semiconductor devices, not the specific insulating barrier liner of the Hartner publication or the present invention. Thus, the Hartner publication stands alone with its teaching of a SiN insulative liner, and the Sun patent stands alone with its teachings of a Ti, TiN conductive liners, with no motivation in either reference to combine each other. In fact, industry pressures to minimize device footprints and reduce extra processing steps dictate directly against the combination of the two references, ostensibly to better protect the contact plug even though each reference provides its own independent solution to protecting its contact plug. In short, a skilled artisan having the Hartner publication would not add the additional space and the additional processing steps of

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the Sun Patent to his or her manufacturing techniques to solve a problem already solved by the Hartner publication.

Thus, it appears that the Office Action has impermissibly used hindsight derived from the teachings in the present application, and not the teachings of the prior art, to reject independent Claim 84. Recently, the Federal Circuit reiterated the importance of "particularly identifying any suggestion ... to combine ... references," to avoid what the court deemed as "hindsight-based obviousness analysis." See In re Dembiczak, 175 F.3d 994 (Fed. Cir. 1999) (attached hereto). In Dembiczak, the Federal Circuit held that that the Board did not particularly identify a suggestion to combine, among other things, a design patent depicting a bag with a jack-o-lantern face, conventional plastic trash bags, and a book showing how to make a paper bag pumpkin by stuffing a trash bag full of newspapers. The Court reiterated that a determination of obviousness cannot simply rely on the inventor's disclosure as a "blueprint" without evidence of a suggestion, teaching or motivation in the prior art. Therefore, the Court did not allow the Board to sustain an obviousness rejection of claims to large trash bags resembling pumpkins or jack-o'-lanterns.

Similar to Dembiczak, the Applicants submit that the Office Action failed to meet its burden of providing some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the disclosure of the Hartner publication, and combine it with the disclosure of the Sun patent. See Section M.P.E.P. § 2143 (stating "To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on the Applicant's disclosure.")

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Accordingly, the Applicants assert that that a skilled artisan would not have been motivated, prior to the Applicants' invention, to combine the Hartner publication with the Sun patent. Thus, the Applicants submit that the Office Action fails to make a *prima facie* case of obviousness under 35 U.S.C. § 103, and the Applicants respectfully request withdrawal of the rejections thereunder.

Claims 85-88 which depend from Claim 84, are believed to be patentable for the same reasons articulated above with respect to Claim 84, and because of the additional features recited therein.

Request For Telephone Interview

In view of the forgoing, the present application is believed to be in condition for allowance, and such allowance is respectfully requested. If further issues remain to be resolved, the Applicants' undersigned attorney of record hereby formally requests a telephone interview with the Examiner. The Applicants' attorney can be reached at (949) 721-2946 or at the number listed below.

In addition, please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

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